

# **Project Completion Report on China Standby Power Project (Year II)**

**for  
China Sustainable Energy Program  
The Energy Foundation**

**From**

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## **Background**

With increasing penetration of household electrical appliances and the rapid development of office automation and networking, a huge number of consumer electronic devices, computers, copiers, and fax machines have been put into use in China over the last two decades. These products almost all have a certain amount of standby power use. The rapid growth of standby energy consumption due to these products and the consequent environmental problems have attracted more and more attentions from researchers and many government and international agencies. Many countries have put forth the corresponding policies and measures to restrict and reduce standby energy consumption (US EPA, IEA, and GEEA). However, standby energy consumption is still a new concept for Chinese consumers and the phenomenon of “unconscious waste of energy” is still very serious in the people’s daily life and work. With the goal of reducing China’s standby energy consumption, China Certification Center for Energy Conservation Products (CECP) and the Lawrence Berkeley National Laboratory (LBNL) have, under the sponsorship of the Energy Foundation (EF), entered into a collaborative project in the development of technical requirements for CECP’s labeling program for consumer electronics and office equipments. These technical requirements will be used to qualify products for CECP’s energy efficiency endorsement label in China.

In the phase I of this collaborative project, CECP and LBNL have conducted technical and economic research on TVs & printers in China. Based on the results of the research, CECP developed specifications for TVs and printers, and carried out corresponding energy conservation certification for these two products. CECP’s standby certification program has made impressive gains in China. Leading manufacturers, such as Haier, Hisens, TCL, Chuangwei, Lenovo, EPSON, Fujitsu, and Brother, have participated in CECP’s certification activities. Media events organized by CECP have greatly improved consumer awareness on standby power loss. Most importantly, reducing standby power loss has been formerly incorporated in China’s energy efficiency policy portfolio and in China’s collaboration with international community on energy efficiency (IEA, 2001).

In phase II of the program, CECP’s main task is to assess the market of copiers & DVD players, to analyze the economic and technical benefits of energy conservation potential,

and to develop technical specifications for copiers and DVD players, with technical assistance from LBNL. Built on the success of Phase I, CECP has paid great attention to the market assessment and economic and environmental benefits of reducing standby power loss in copiers and DVD players, and solicited inputs from stakeholders before finalizing product certification requirement. This report summarizes activities undertaken under this project, and the expected energy conservation and environmental benefits due to the implementation of certification programs for copiers and DVD players in China.

## **Activities and Accomplishments**

LBNL and CECP proposed to work together to develop technical guidelines for CECP's energy labeling program for copiers and DVD/VCD players. Specifically, LBNL provided technical assistance to CECP in collecting and analyzing relevant technical market data in China, and in providing related policy and technical information in other international labeling programs such as the Energy Star in the US and GEEA program in Europe. During the data collection process, LBNL has worked closely with CEIPRE testing lab in Guangzhou to ensure that standby power measurement were conducted under the internationally recognized testing conditions.

In addition, LBNL assisted CECP in its outreach activities toward domestic as well as international stakeholders. LBNL was involved extensively in the process of drafting technical specifications to ensure that they are technically feasible and harmonized or would be harmonized in the near future with other international programs to reduce standby power use, such as the Energy Star and similar EU effort. LBNL staff has participated in CECP organized review meeting with Chinese manufacturers and addressed the concerns raised during the discussions with industry stakeholders. Whenever feasible, LBNL has also participated in promotional activities on reducing standby power consumption.

## **Impact of CECP's Standby Power Activities**

Built on the success achieved in the Phase 1 of the project, CECP has significantly expanded its certification program for products with standby power use. There are now seven consumer and office products with certification programs, including TV and printers (launched in the phase 1), copiers and DVD/VCD players (during the phase 2 of this project), computers, monitors, and fax machines (co-funded by the United Nations Foundation).

CECP has also strengthened its relationship with a host of international and Chinese manufacturers of consumer electronics and office equipments, components manufacturers (On Semiconductors), and testing laboratories. For example, On Semiconductors has become a major advocate for CECP's low standby power program after registering strong sales of its power management chips.

Through outreach and promotion activities (such as special television programs via

CCTV), the awareness of standby power loss has been significantly raised. For example, Shanghai has invested in the development of low standby power outlet for air-conditioners and consumer audio/video equipment as a way to combat the electricity shortage this summer. The power outlet/strip can be control by an infrared remote control to cut off the electricity to the outlet, thus reducing standby power loss.

Given China's importance as the manufacturer for the world, CECP's effort in reducing standby power loss has also gained significant international recognitions. In April 2004, CECP was given the Climate Change Award by the US Environmental Protection Agency. CECP has been working with US EPA closely to coordinate their respective program on power adaptors, a first for the Energy Star program. CECP has been invited by the European Union to collaborate on a variety of products such as set-top-box and power adaptors.

The certification of low-standby power products, especially among the office equipment, also supports the development of an effective government procurement project, since these office products are likely to be among the first batch of products that would be on the government efficient procurement list.

In terms of energy saving and GHG emission reductions, the implementation of CECP's certification program for copiers and DVD/VCD players will have far-reaching impact as well. According to the joint analysis by CECP and LBNL, by 2020, CECP's certification program for copiers and DVD/VCD players would reduce China's electricity consumption by 1.5 billion kWh, with a corresponding reduction of CO2 emissions of over 500 thousand tons of carbon. From 2003 to 2020, the cumulative reduction in electricity attributable to CECP's program could reach by 12.9 billion kWh, while the reduction of carbon emission would reach 4 million tons of carbon (table 1).

**Table 1: Economic and Environmental Impacts of Reducing Standby Power Use in DVD/VCD Players and Copiers in China**

|   | 2020            |             | 2003-2030       |              |
|---|-----------------|-------------|-----------------|--------------|
|   | DVD/VCD players | Copiers     | DVD/VCD players | Copiers      |
| <b>Electricity Savings ( million kWh)</b> | <b>635</b>      | <b>906</b>  | <b>6500</b>     | <b>6400</b>  |
| <b>Cost Savings (million RMB)</b>         | <b>362</b>      | <b>500</b>  | <b>3700</b>     | <b>3600</b>  |
| <b>Emissions Reductions ( 1000 tons)</b>  |                 |             |                 |              |
| <b>Carbon</b>                             | <b>215</b>      | <b>307</b>  | <b>2200</b>     | <b>2200</b>  |
| <b>NOx</b>                                | <b>2.6</b>      | <b>3.7</b>  | <b>26.7</b>     | <b>25.9</b>  |
| <b>SO2</b>                                | <b>33.7</b>     | <b>48.1</b> | <b>347.9</b>    | <b>337.3</b> |
| <b>Particulars</b>                        | <b>15.8</b>     | <b>22.5</b> | <b>162.5</b>    | <b>157.5</b> |
|   |                 |             |                 |              |

## Lessons Learned

The China Standby Power Project has achieved considerable success over the last few years. The success can be attributed to the following four factors: 1) identifying a highly motivated and entrepreneurial partner, CECP; 2) active policy advocacy; 3) extensive outreach to the manufacturers; and 4) creative media campaign in partnership with private sector stakeholders.

CECP has proven to be a highly committed and entrepreneurial partner in this endeavor. Early in the our initial discussion, CECP quickly grasped the importance of the emerging opportunities of reducing standby power loss in China and took initiative in conducting the first measurement of standby power use in Chinese homes. It also devoted a significant number of its staff, who is dedicated to working with both the international and domestic partners. Recruiting CEIPRE Lab as a partner also helped CECP to gain credibility and access among industry stakeholders. In fact, CEIPRE provided extremely valuable technical capabilities that were not available within the CECP organization and was able to deliver significant amount of testing data over a short period of time. This relationship has been further strengthened during the project cycle, and remains one of the best examples of mutually beneficial collaborative relationship between Chinese governmental agencies.

CECP and LBNL were able to leverage their existing relationship with NDRC to educate the key policy makers the growing importance of standby power loss and international best practice to counter such losses. We also leveraged similar international effort to strengthen the case for China's adoption of low standby power products, such as the IEA-SETC workshop on appliance efficiency. Our policy advocacy achieved highly visible and fast results: SETC formally adopted reducing standby power loss as one of its key policy goals in November 2001.

With CEIPRE's assistance, CECP initiated extensive outreach effort to Chinese manufacturers, both to educate and to provide feasible technical solutions to the manufacturers. Such effort was well appreciated by the manufacturers which consider low-standby feature both as a marketing advantage and potentially a cost-cutting solution. CECP's effort to harmonize with international labeling schemes also provided added incentive to manufacturers who are developing their export strategy.

Given limited budget of this project, CECP sought industry partners to raise the awareness of standby power loss through media campaigns. This strategy would leverage CECP's credibility with manufacturers' resource to achieve maximum media coverage. The August 2002 news event was a highly successful example of this strategy. The extensive media coverage has turned standby loss and vampire power into the buzz words in China. Subsequent TV programs on CCTV have been well received well all over China. On my recent visit to Nanjing, one of my friends who does not work in the energy field told me that he has seen those programs on local TV stations as well.

## Financial Report

By May 1, 2004, the total expenditure of the project amounts to US \$92,729. The remaining funds will be used to support CECP in its outreaching activities throughout the end of the year.

### Financial Summary China Standby Power Project (Year II)

|                            | Project<br>Budget | Total Project EF Portion<br>Costs |
|----------------------------|-------------------|-----------------------------------|
| <b>Revenue</b>             |                   |                                   |
| Energy Foundation          | \$ 95,000         | \$ 92,729 \$ 92,729               |
| <i>Total Revenue</i>       | <b>\$ 95,000</b>  | <b>\$ 92,729 \$ 92,729</b>        |
| <b>Expenses</b>            |                   |                                   |
| personnel                  |                   | \$ 88,838                         |
| Jiang Lin                  |                   |                                   |
| Jeff Warner                |                   |                                   |
| Joanna Lewis               |                   |                                   |
| Yanxia Chen                |                   |                                   |
| David Fridley              |                   |                                   |
| Peter Biermayer            |                   |                                   |
| Vernice Arnett             |                   |                                   |
| Other Costs                |                   |                                   |
| Other, incl communications |                   | \$ 3,891                          |
| <b>Total</b>               |                   | <b>\$ 92,729</b>                  |